

Conventional Intersection

The North Carolina Department of Transportation (NCDOT) is challenged to try non-traditional approaches to relieving congestion and improving safety in heavily developing areas. The superstreet is a non-traditional option the NCDOT has found beneficial. Congestion on urban and suburban arterials is an imminent consequence of developing regions of the state. Conventional intersections can create added congestion and long queues resulting in increasing delays in travel time due to the increased traffic flow.



Superstreet

A superstreet is a type of intersection in which side-street traffic is redirected from going straight through or left at a divided highway intersection. All side-street traffic must turn right, but can then access a U-turn to proceed in the desired direction. Other configurations of superstreets are possible based on site specific conditions.

The Superstreet concept provides an effective alternative along heavily traveled regional arterials in areas with anticipated commercial and residential growth. The design concept is contingent upon a series of features that reduce potential conflict points while maintaining traffic flow, resulting in:

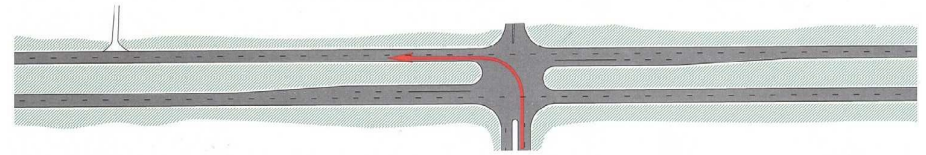
- Increased safety by reducing conflict points at major crossovers
- Time savings from simplified signal phasing
- Enhanced signal coordination
- Dedicated U-turn lanes for efficiency



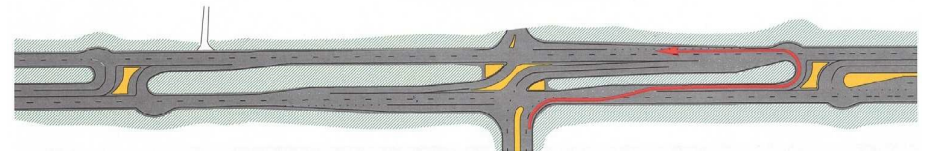
Left Turn Movement

The conventional intersection allows left turn movements from side streets creating numerous conflict points. The superstreet reduces conflict points therefore increasing safety.

CONVENTIONAL INTERSECTION



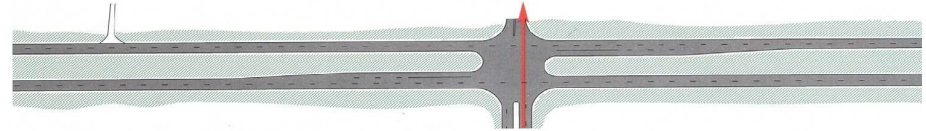
SUPERSTREET



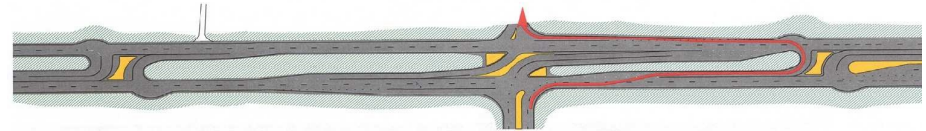
Through Movement

The conventional intersection allows left turn movements from side streets creating numerous conflict points. The superstreet reduces conflict points therefore increasing safety.

CONVENTIONAL INTERSECTION



SUPERSTREET



Benefits of Superstreets

- Safety
- Time savings
- Increased capacity
- Access Management
- Improved traffic flow
- Land use and corridor protection
- Alternative to interchange (Less cost)
- Smaller "footprint" than an interchange

Moore County - US 1 Alternatives Findings

Based on an analysis of future (2040) conditions

Option	Property Impact	Traffic Operations	Pros	Cons
Do Nothing	None	Very Poor	<ul style="list-style-type: none"> - No direct property impact - No direct cost 	<ul style="list-style-type: none"> - Excessive queues and delays (indirectly affects properties) - Traffic growth will likely worsen safety along corridor - Indirect costs in lost time and increased emissions
Freeway	Severe	Very Good	<ul style="list-style-type: none"> - Excellent improvement in traffic flow on US 1 	<ul style="list-style-type: none"> - No direct property access along US 1 - High cost - Large footprint
6-Lane Full-Movement	Moderate	Moderate	<ul style="list-style-type: none"> - Improved traffic flow from "Do Nothing" option - Direct access at median openings - Smaller "footprint" than an interchange 	<ul style="list-style-type: none"> - Widening will affect existing properties along corridor - Long queues expected, particularly on side streets - Large intersections - not pedestrian friendly
4-Lane Superstreet	Low	Moderate	<ul style="list-style-type: none"> - Improved traffic flow from "Do Nothing" option - Less cost than other improvement options - Protects corridor by limiting widening 	<ul style="list-style-type: none"> - Left-out and through movements prohibited on side streets - Only expected to work until 2035
6-Lane Superstreet	Moderate	Good	<ul style="list-style-type: none"> - Excellent improvement in traffic flow on US 1 - Smaller "footprint" than an interchange 	<ul style="list-style-type: none"> - Left-out and through movements prohibited on side streets - Widening will affect existing properties along corridor